

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1

6

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 09/03/2019		2. CONTRACT NO. (If any) EP-C-17-045		6. SHIP TO:	
3. ORDER NO. 68HERC19F0249		4. REQUISITION/REFERENCE NO. PR-OW-19-00671		a. NAME OF CONSIGNEE CAD	
5. ISSUING OFFICE (Address correspondence to) CAD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001				b. STREET ADDRESS US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136	
				c. CITY Cincinnati	e. ZIP CODE 45268-0001
7. TO: Deborah Ellison				f. SHIP VIA	
a. NAME OF CONTRACTOR RESEARCH TRIANGLE INSTITUTE				8. TYPE OF ORDER	
b. COMPANY NAME				<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
c. STREET ADDRESS PO BOX 12194				Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
d. CITY RESEARCH TRIANGLE PARK		e. STATE NC	f. ZIP CODE 27709		
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE CAD	

11. BUSINESS CLASSIFICATION (Check appropriate box(es))				12. F.O.B. POINT	
<input type="checkbox"/> a. SMALL <input checked="" type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) <input type="checkbox"/> h. EDWOSB VETERAN-OWNED ELIGIBLE UNDER THE WOSB PROGRAM					
13. PLACE OF		14. GOVERNMENT B/L NO.		15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date) Multiple	
a. INSPECTION Destination	b. ACCEPTANCE Destination			16. DISCOUNT TERMS	

17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	DUNS Number: 004868105 This task order award is a result of RFP PR-OW-19-00204. EPA Regions 9 and 10 Ocean Disposal Site Monitoring Surveys. TOCOR: Allan Ota Max Expire Date: 08/03/2022 Invoice Approver: Allan Ota Alt Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)
	21. MAIL INVOICE TO:						
	a. NAME RTP Finance Center						\$2,108,748.00
	b. STREET ADDRESS (or P.O. Box) US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts						\$2,108,748.00
c. CITY Durham			d. STATE NC	e. ZIP CODE 27711		17(i) GRAND TOTAL	

22. UNITED STATES OF AMERICA BY (Signature) 09/03/2019

ELECTRONIC SIGNATURE

23. NAME (Typed)
Lawrence Edelmann
TITLE: CONTRACTING/ORDERING OFFICER

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
2

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER 09/03/2019	CONTRACT NO. EP-C-17-045	ORDER NO. 68HERC19F0249
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ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	Invoice App: Jayne Carlin Admin Office: CAD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: W136 Cincinnati OH 45268-0001 Period of Performance: 09/03/2019 to 07/30/2020 Base Period; EPA Regions 9 and 10 Ocean Disposal Site Monitoring Surveys Delivery: 07/30/2020 Accounting Info: 19-20-B-87DE-000BD4-2505-1987EE9020-00 1 BFY: 19 EFY: 20 Fund: B Budget Org: 87DE Program (PRC): 000BD4 Budget (BOC): 2505 DCN - Line ID: 1987EE9020-001 Funding Flag: Complete Funded: \$441,239.00				2,108,748.00	
0002	Option Period 1; EPA Regions 9 and 10 Ocean Disposal Site Monitoring Surveys (Option Line Item) 305 Days After Award Delivery: 07/30/2021					
0003	Option Period 2; EPA Regions 9 and 10 Ocean Disposal Site Monitoring Surveys (Option Line Item) 305 Days After Award Delivery: 07/30/2022					
0004	Option Period 3; EPA Regions 9 and 10 Ocean Disposal Site Monitoring Surveys (Option Line Item) 305 Days After Award Continued ...					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$2,108,748.00

ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION

PAGE NO
3

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER	CONTRACT NO.	ORDER NO.
09/03/2019	EP-C-17-045	68HERC19F0249

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	Delivery: 07/30/2023					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

**EPAAR 1552.211-73 LEVEL OF EFFORT-COST-REIMBURSEMENT TERM CONTRACT.
(MAY 2016) – BASE PERIOD**

(a) The Contractor shall perform all work and provide all required reports within the level of effort specified below. The Contractor shall provide up to **5,190** direct labor hours for the Base Period. The Government's best estimate of the level of effort to fulfill these requirements is provided for advisory and estimating purposes. The Government is only obligated to pay for direct labor hours ordered and corresponding fixed fee for labor hours completed.

(b) Direct labor includes personnel such as engineers, scientists, draftsmen, technicians, statisticians, and programmers, and not support personnel such as company management or data entry/word processing/accounting personnel even though such support personnel are normally treated as direct labor by the Contractor. The level of effort specified in paragraph (a) of this section includes Contractor, subcontractor, and consultant non-support labor hours.

(c) If the Contractor provides less than 90 percent of the level of effort specified for the base period or any optional period exercised, an equitable downward adjustment of the fixed fee, if any, for that period will be made. The downward adjustment will reduce the fixed fee by the percentage by which the total expended level of effort is less than 100% of that specified in paragraph (a). (For instance, if a hypothetical base period LOE of 100,000 hours is being reduced to 70,000, the fixed fee shall also be reduced by the same 30%. Using a corresponding hypothetical base-period fixed fee pool of \$300,000, the reduced fixed-fee amount is calculated as: $\$300,000 \times (70,000 \text{ hours} / 100,000 \text{ hours}) = \$210,000$.)

(d) The Government may require the Contractor to provide additional effort up to 110 percent of the level of effort for any period until the estimated cost for that period has been reached. However, this additional effort shall not result in any increase in the fixed fee, if any.

(e) If this is a cost-plus-incentive-fee (CPIF) contract, the term "fee" in paragraphs (c) and (d) of this section means "base fee and incentive fee." If this is a cost-plus-award-fee (CPAF) contract, the term "fee" in paragraphs (c) and (d) means "base fee and award fee."

(f) If the level of effort specified to be ordered during a given base or option period is not ordered during that period, that level of effort may not be accumulated and ordered during a subsequent period.

(g) These terms and conditions do not supersede the requirements of either the "Limitation of Cost" or "Limitation of Funds" clauses.

**1552.217-71 OPTION TO EXTEND THE TERM OF THE CONTRACT-COST-TYPE
CONTRACT (APR 1984)**

The Government has the option to extend the term of this contract for three (3) additional period(s). If more than 30 days remain in the contract period of performance, the Government, without prior written notification, may exercise this option by issuing a contract modification. To exercise this option within the last 30 days of the period of performance, the Government must provide to the Contractor written notification prior to that last 30-days of the period. This preliminary notification does not commit the Government to exercising the option. Use of an option will result in the following contract modifications:

(a) The "Period of Performance" clause will be amended to cover a base period and option periods:

	Period Start Date	End Date
Base Period	Award	07/30/2020
Option Period 1	07/31/2020	07/30/2021
Option Period 2	07/31/2021	07/30/2022
Option Period 3	07/31/2022	07/30/2023

(b) Paragraph (a) of the "Level of Effort" clause will be amended to reflect a new and separate level of effort of:

Period	Level of Effort
Base Period	5,190
Option Period 1	5,190
Option Period 2	5,190
Option Period 3	5,190

(c) The "Estimated Cost and Fixed Fee" clause will be amended to reflect increased estimated costs and fixed fee for each option period as follows:

Period	Estimated Cost	Fixed Fee	Total CPFF
Option Period 1	\$(b)(4)	\$(b)(4)	\$2,231,827
Option Period 2	\$	\$	\$2,354,890
Option Period 3	\$	\$	\$2,468,656

(d) If the contract contains "not to exceed amounts" for elements of other direct costs (ODC), those amounts will be increased as follows: N/A

LOCAL CLAUSES EPA-B-32-101 LIMITATION OF FUNDS NOTICE

(a) Pursuant to the Limitation of Funds clause, incremental funding in the amount of \$(b)(4) is allotted to cover estimated cost. Funding in the amount of \$(b)(4) is provided to cover the corresponding increment of base fee. The amount allotted for costs is estimated to cover the contractor's performance through 11/19/2019.

(b) When the contract is fully funded (i.e. the sum of the total estimated cost, base fee, award fee pool available for award, and award fee awarded, as set forth in the schedule of this contract), the Limitation of Cost clause shall become applicable.

(c) Recapitulation of Funds

EP-C-17-045; TO 68HERC19F0249			
Base Period - (09/04/2019 - 07/30/2020)			
	Estimated Cost	Fixed Fee	Cost Plus Fixed Fee
Task Order Award	\$(b)(4)	\$(b)(4)	\$441,239.00
Total Funded	\$(b)(4)	\$(b)(4)	\$441,239.00
Total Task Order	\$	\$	\$2,108,748.00
Balance Unfunded	\$	\$	\$1,667,509.00

LOCAL CLAUSES EPA-B-16-102 ESTIMATED COST AND FIXED FEE – BASE PERIOD

(a) The estimated cost of this contract is \$(b)(4)

(b) The fixed fee is \$(b)(4)

(c) The total estimated cost and fixed fee is **\$2,108,748.00**

LOCAL CLAUSE EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order Contracting Officers Representatives (CORs)/Project Officers for this contract are as follows:

Task Order COR (TOCOR): Allan Ota, ota.allan@epa.gov PH 415-972-3476

Alternate Task Order COR (Alt TOCOR): Jayne Carlin, carlin.jayne@epa.gov PH 206-553-8512

Contracting Officials responsible for administering this contract are as follows:

Contracting Officer: Lawrence Edelmann, US EPA. Cincinnati Acquisition Division, 26 W MLK Dr. MS W136A, Cincinnati, Ohio 45268 edelmann.lawrence@epa.gov

Contract Specialist: Lawrence Edelmann, US EPA. Cincinnati Acquisition Division, 26 W MLK Dr. MS W136A, Cincinnati, Ohio 45268 edelmann.lawrence@epa.gov

**PERFORMANCE WORK STATEMENT
PR-OW-19-00204
TSAWP II MULTIPLE-AWARD CONTRACT SOLICITATION**

Title: EPA REGIONS 9 and 10 OCEAN DISPOSAL SITE MONITORING SURVEYS

Table of Contents

Section 1.0 Project Description

Section 2.0 Description of Tasks

Section 3.0 Schedule of Deliverables & Milestones

Section 4.0 General Requirements

Section 5.0 Appendices

Task Order Contracting Officer Representative (TOCOR):

Name: Allan Ota

Address: US EPA Region 9, 75 Hawthorne Street, San Francisco, CA 94105

Phone: 415.972.3476

E-mail: ota.allan@epa.gov

Alternate Task Order Contracting Officer Representative (TOCOR):

Name: Jayne Carlin

Address: 1200 Sixth Ave, Suite 900, Seattle, WA, 98101

Phone: 206.553.8512

E-mail: carlin.jayne@epa.gov

PERIOD OF PERFORMANCE:

Base Period: Award to July 30, 2020

Option Period 1: July 31, 2020 to July 30, 2021

Option Period 2: July 31, 2021 to July 30, 2022

Option Period 3: July 31, 2022 to July 30, 2023

LEVEL OF EFFORT:

The anticipated Level of Effort is as follows:

Base Year: 5,190 hours

Option Year 1: 5,190 hours

Option Year 2: 5,190 hours

Option Year 3: 5,190 hours

SECTION 1.0: PROJECT DESCRIPTION

1.1 Background

Ocean disposal sites are designated by the U.S. Environmental Protection Agency (EPA) to minimize environmental effects of disposal to the area or region in which the site is located. Most ocean disposal occurring today comes from dredging operations to maintain navigation channels. Many of these disposal sites are located offshore of major ports, harbors, and marinas nationwide and are very important for maintaining safe navigation for commercial, military, and private vessels.

Disposal sites designated under the Marine Protection, Research, and Sanctuaries Act (MPRSA) have requirements that are based on site designation parameters established in the MPRSA and identified in the site's management and monitoring plan (SMMP). Each SMMP typically incorporates a tiered monitoring structure to assess potential environmental issues specific for each site and the geographic area in which it is located. Site monitoring activities include, but are not limited to: water column data collection and analyses; benthic sample collection including sediment grabs and trawls; benthic samples analyses for sediment composition, chemical content, and concentrations, and benthic community structure; video and image data collection and analyses; hydrodynamic analyses; geophysical surveys to determine distribution of native sea bed features and deposits of material disposed of at these disposal sites; and other data collection and analyses to assess additional characteristics at or near these sites. While typically this work will be related to surveying already designated and potential future disposal sites, surveys may include areas outside of the boundaries of a disposal site including but not limited to reference sites, transit routes over which disposal vessels transport disposal material; and other marine habitats and/or physical areas of interest and/or concern. EPA has responsibility for site monitoring in accordance with requirements specified at 40 CFR 228.13.

This request for proposal identifies types of survey activities, lab work, sampling needs, analytical needs, and reporting considerations which could be conducted under this task order. While this task order is primarily intended to support work in EPA Regions 9 and 10, survey work may be conducted in other geographic areas. This Performance Work Statement (PWS) may also be utilized to lease ship time and sampling equipment to support survey activities. Additional details providing specific needs for specific surveys, including the survey sampling and analysis requirements as well as reporting and documentation requirements, will be provided through written technical direction (TD) specific to each activity. This PWS describes the types of work to be conducted under the Task Order. It is not possible to know precisely what surveys/activities will need to be conducted during each period and over the next several years nor the specific sampling and analytical requirements of the surveys, however, it is estimated that there will be up to 8 surveys per option year.

1.2 Objective

The primary purpose of this Task Order is to collect hydroacoustic/bathymetric, physical, chemical, and biological data to evaluate the environmental condition of a proposed or established MPRSA-designated disposal site and/or the area(s) in proximity to or associated with the site including but not limited to reference sites, transit routes over which disposal vessels transport disposal material, and other marine habitats and/or physical areas of interest and/or concern. Video surveys using a remotely operated vehicle(s) (ROV), or similar, may also be planned under this Task Order. To achieve this objective, it may require Contractor support for leasing sampling vessels and equipment; providing staff to support survey planning and execution; arranging sample processing, lab analysis, data management, handling, and interpretation; and/or producing reports describing survey findings. Additional surveying, analyses, and reporting of other port, harbor, marina, disposal and/or oceanographic sites, and/or tasks related to the management of materials disposed at sea may be evaluated under this Task Order as determined by the needs of the program.

SECTION 2.0: DESCRIPTION OF TASKS

TASKS

After Task Order (TO) award and initiation of Task 1, the Task Order Contracting Officer Representative (TOCOR) will furnish Technical Direction (TD) on a case-by-case basis.

The Contractor should anticipate working with the TOCOR and designated EPA staff; however, the TOCOR, the EPA Alternate TOCOR (if the TOCOR is on leave or travel), the EPA Contract Level Contracting Officer Representative (CLCOR) and the EPA Contracting Officer (CO) are the only individuals authorized to issue TD. Other government personnel may engage in technical communications with the contractor but are not authorized to give TD. See contract clause EPAAR 1552.237-71 Technical Direction (AUG 2009).

Task 1: Project Management and Planning

The Contractor shall participate in a Kickoff Meeting with the TOCOR via conference call at the beginning of each option period and for each new project the TOCOR issues via TD. The Kickoff Meeting with the TOCOR will cover the following topics:

- Points of contact;
- Roles and responsibilities;
- Quality assurance protocols;
- Timelines and schedules for benchmarks, milestones, and deliverables;
- Software, files, format requirements for documents, data, reports, and other deliverables;
- Processes for coordination, communication, and transfer of documents, data, reports, and other deliverables, as well as comments and revisions of deliverables;
- Dates, times, and format for monthly calls and monthly technical progress reports; and
- Additional general TO administrative information.

The TOCOR shall coordinate and set-up calls between EPA staff and the Contractor's technical lead to discuss the status and progress of the work under this PWS as appropriate. Unless otherwise directed by the TOCOR, the Contractor shall provide meeting summaries in Microsoft Word format after the calls within five (5) business days in draft form for the TOCOR to review. The TOCOR shall provide any edits and/or comments on each meeting summary or approve the meeting summary without change. The final written meeting summary shall be provided within five (5) business days after receipt of comments from the TOCOR.

During the course of this Task Order, the Contractor shall notify the TOCOR of any deviations to agreed-upon approaches, problems, delays, personnel issues, or questions as soon as they arise, including notification of any data collection, sampling, or quality assurance issues and project delays within 1 business day. The Contractor shall provide a monthly technical progress report in accordance with contract requirements, which will be used for invoice review purposes. The monthly technical reports shall provide the status technical progress, budget/hour categories, and accounting of balances, for each project under this PWS separately. All reporting shall be provided in accordance with the contract sections G & H.

The Contractor shall provide Quality Assurance Project Plans (QAPP) as required by EPA guidelines. All surveys and data analyses require an EPA-approved QAPP prior to initiation of work. The Contractor should use the guidance document found in EPA QA/G-5 - Guidance on Quality Assurance Project Plans. The QAPP will provide detail to demonstrate that:

- The project technical and quality objectives (e.g., Data Quality Objectives) are identified;
- The intended measurements or data acquisition methods are appropriate for achieving project objectives;
- Assessment procedures are sufficient for confirming that data of the type and quality needed and expected are obtained; and

- Any limitations on the use of the data can be identified and documented.

The Contractor shall submit a project specific draft QAPP in Microsoft Word format as directed by written TD (see below). The TOCOR shall provide any edits and/or comments on the draft QAPP or approve the draft QAPP without change. Within 10 business days from receipt of EPA comments on the draft QAPP, the Contractor will submit a revised final QAPP.

See Contract Level Quality Assurance Surveillance Plan for specific performance standards and indicators related to this task. All written materials must be compliant with Section 508 of the Americans with Disabilities Act.

Task 2: Site Surveys and Sample Analyses

Written TD will be used to direct Contractor's work and will clarify location, activity, ship requirements, site characteristics, sampling equipment, backup sampling equipment, and other specific needs of the disposal site survey(s) or other activity. See Figure 1 for a graphical display of Region 9's and Region 10's ocean disposal sites. General vessel requirements are included as Appendix 1. General analytical requirements are also attached as Appendix 2.

As provided by TD the Contractor shall provide support through one or more of the below activities:

- 2.1 **Vessel Leasing.** Identify and lease specially-equipped vessel(s) (survey platform) to complete the ocean survey described in the TD. General vessel requirements for survey platforms capable of supporting 12 or 24-hour operations are provided in Appendix 1.
- 2.2 **Survey logistics, handling, and packaging.** Provide support for developing survey logistics including acquiring transport services for equipment to and from the required locations; and, provides necessary equipment including sample containers, QA forms, packaging and shipping materials, storage, and medium to preserve samples.
- 2.3 **Survey Planning.** Develop survey plan to describe how to accomplish activities outlined in TD. (See survey plan template in Appendix 3).
- 2.4 **Technician support for survey.** Provide approximately 0-6 technicians or scientists to participate in surveys to operate equipment, collect samples, store samples, handle QA, operate leased equipment (such as ROV), etc. depending on survey needs. EPA personnel will serve as Chief Scientist and staff will be present on most surveys.
- 2.5 **Sediment Sampling.** Collect sediment samples using various grab and/or coring devices to provide for physical (e.g. grain size), chemical, and/or biological (e.g. benthic infauna) analyses adhering to methods and QA specified. Note: 12-240 samples are typically collected per disposal site and/or area in proximity to disposal site
- 2.6 **Trawls.** Conduct benthic, planktonic, surface debris, and other types of trawls; quantify and categorize the information collected adhering to methods and QA specified through TD.
- 2.7 **Oceanographic Data Collection and Analyses.** Deploy wave- and current-measuring instrumentation, such as an acoustic doppler current profiler (ADCP). Manage, analyze, and report data as specified in TD.
- 2.8 **Water Sample Collection and Water Quality Measurements.** Deploy water column profiling equipment, such as a conductivity, temperature, and depth (CTD) profiler and rosette water sampler. Collect, analyze, and report data and water samples as specified in TD.
- 2.9 **Sediment Profile Imaging and Plan View Image Collection and Assessment.** Deploy Sediment Profile Imaging (SPI) camera to obtain sediment plan view and profile images (images from 12-150 stations are typically collected per disposal site). SPI operations typically include 5 replicate

- images per station. Contractor will provide an assessment and analysis of images collected to determine the condition of the benthic habitat.
- 2.10 **Video Survey and Analyses.** Collect images/videos and/or samples using benthic sled, remotely operated vehicles (ROVs) or submersible. Conduct surveys, provide analysis, interpretation of imagery and reporting, as specified.
 - 2.11 **Acoustic Survey Methods and Analyses.** Collect site data via multibeam bathymetry, side scan SONAR, sub-bottom and/or magnetometer surveys. Provide results in format specified in TD.
 - 2.12 **Laboratory Analyses.** Provide laboratory analyses of chemical, physical, and/or biological samples as described in final QAPP.
 - 2.13 **Data Interpretation and Management.** Provide interpretation of data collected or provided from laboratory analyses in appropriate format(s) including metadata, summary of measures, and accompanying QA/QC as described in TD. Once a survey is completed and all data are analyzed and interpreted, the Contractor will provide a single final report containing a write up of each component of a complete survey where sub-contractors are utilized. Provide support in uploading data to existing EPA databases and/or developing and maintaining database for ocean disposal site monitoring data.
 - 2.14 **Report Development.** Develop report(s), including field reports (e.g. Site Monitoring and Assessment Report) documenting survey activities, and sampling and assessment reports, which capture all the results and convey the findings related to the objectives of the survey conducted. (See report template in Appendix 4).
 - 2.15 **Facilitation and coordination support.** Provide support to facilitate and/or coordinate administrative functions related to ocean disposal site(s) including trainings, consultations, and public meetings. The Contractor will provide deliverable (e.g. meeting notes, reports, etc.) related to these events as specified in TD.

Contractor shall conduct survey/project activities and provide deliverables in accordance with each subtask under Task 2 which was included in the TD issued by the TOCOR. In accordance with each TD, the Contractor shall:

- 1. Participate in meetings and conference calls arranged by the TOCOR and in accordance with the schedule outlined in each TD.
- 2. Provide supporting documentation to facilitate EPA review of draft deliverables. The Contractor shall provide both scientific/technical and editorial review as defined in section 2.7 of the Prime Contract Performance Work Statement on all draft products before submission to the TOCOR for review. This process does not need to be performed by an independent peer reviewer. It is expected that all editorial review comments will be addressed before deliverables are furnished to the TOCOR for review (in the case of draft deliverables) or acceptance (in the case of final deliverables); and that questions raised by scientific/technical review will be either addressed or discussed with the TOCOR prior to the Contractor furnishing deliverables.

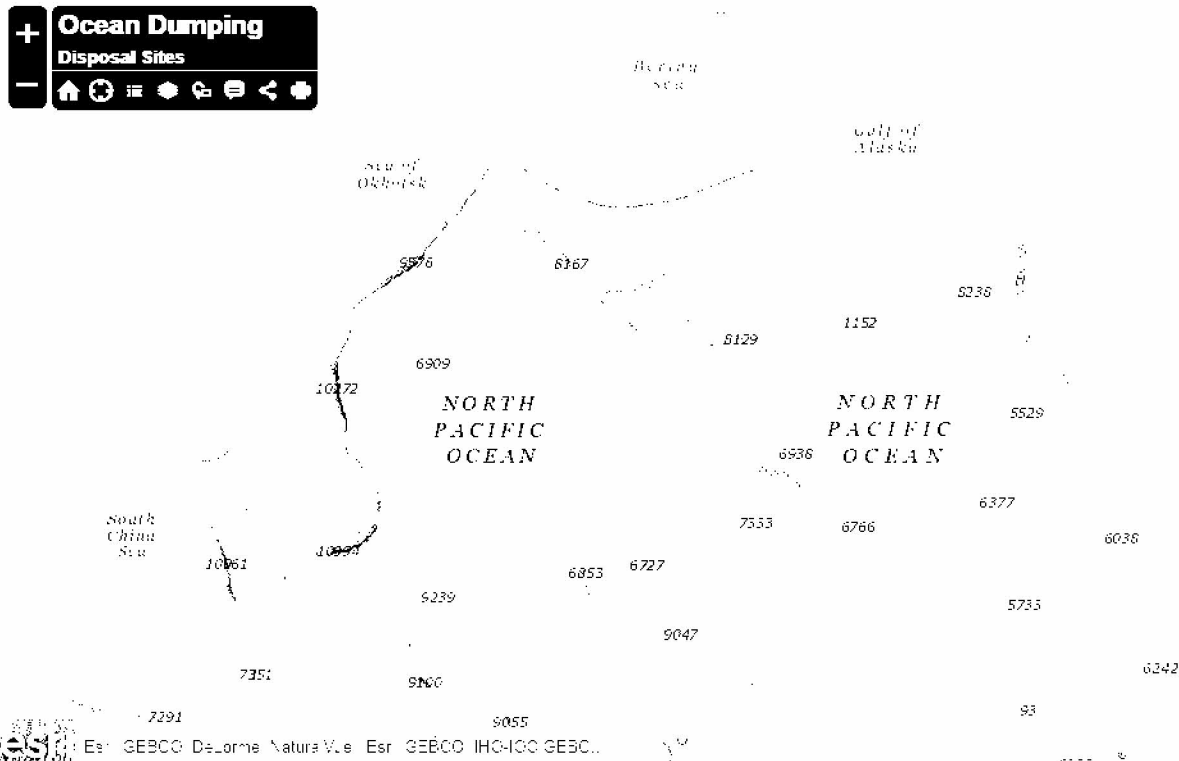


Figure 1 – Region 9 and 10 designated ocean disposal sites. For a more detailed map please visit: <https://www.epa.gov/ocean-dumping/ocean-disposal-map>.

Task 3: Reporting and Data Management

Following the collection and analysis of field data, the Contractor shall review all data and provide data files in EPA-specified electronic (digital) format(s), which may include but are not limited to: Microsoft Office/Excel, Extensible Markup Language (XML), Comma-Delimited format (CSV), Extended Triton format (XTF), Portable Document Format (PDF), Joint Photographic Experts Group (JPEG), and Geographic Information Systems (GIS)-compatible formats.

All laboratory(ies) final deliverables shall include QA/QC data. The Contractor shall perform a data quality review of the conventional data before submitting the deliverables to the EPA for review and approval. The scope for such reporting will be described in the TD for that survey.

The Contractor shall provide support in managing and archiving data after completion of each ocean survey, as described in TD for that survey. Additional data management support may include one or more of the following: (1) utilization of appropriate backup media; and (2) configuration of appropriate formats and features for upload into EPA-supported databases as appropriate (i.e., STORET WQX- <http://www.epa.gov/storet/wqx/>; see note below).

Note: The Contractor shall submit data collected to Water Quality EXchange (WQX), in addition to submitting it to the EPA TOCOR. WQX is a tool to share physical, chemical, biological, habitat, metric, and index data over the Internet. WQX uses EPA's Exchange Network to transfer water quality monitoring data to EPA STORET. List of data fields can be found at: <http://www.exchangenetwork.net/exchanges/water/wqx.htm>. Data can also be organized and

submitted using WQX Web which is a Microsoft Excel based tool located at:
http://www.epa.gov/storet/wqx/wqxweb_downloads.html.

SECTION 3.0: SCHEDULE OF DELIVERABLES & MILESTONES

Deliverables and deliverable schedule(s) shall be clarified in the final TD developed by the TOCOR. The Contractor shall accept or provide comments on each TD in writing within five working days from receipt of each TD. The Contractor shall schedule the conference call to discuss deliverables and project details within five (5) working days of receipt of the TD, as appropriate. The Contractor shall document the outcomes of this meeting and provide a copy to the TOCOR. The Contractor shall provide the draft written deliverable(s) for review by TOCOR and these deliverables shall be prepared in accordance with the timeframe specified in the TD. The Contractor shall provide the final written deliverable(s) in accordance with the timeframe specified in the TD.

TASK DELIVERABLE & MILESTONES SCHEDULE

Base Period and each subsequent option period (unless modified by written technical direction)

Deliverable	Due Date
Task 1 – Deliverables	
Kickoff meeting	Kickoff Meeting - Within 10 working days of Task Order Award (or after initiation of option) and 5 working days after receipt of TD by TOCOR initiating a new project/survey.
Conference Calls and Communication	<p>Conference calls will be held monthly to manage this Task Order. Meeting agendas will be e-mailed to the TOCOR, EPA Technical Lead, and/or any additional personnel as determined by the EPA Technical Lead at least two (2) days prior to the meeting. A list of action items specific to each meeting participant shall be provided along with the meeting agenda.</p> <p>Draft and e-mail draft meeting minutes, to include any updates to the action items, to the TOCOR no later than three (3) calendar days following any meeting.</p> <p>Amend and finalize meeting minutes within five (5) calendar days following receipt of comments from the TOCOR and/or EPA Technical Lead.</p> <p>Additional conference calls and communications as required by TD to manage ongoing work.</p>
QAPP	Draft QAPP shall be provided to TOCOR as directed in the TD. Final QAPP shall be submitted to EPA within 10 business days of receipt of EPA comments. The schedule shall allow for QAPP finalized and approved by EPA 10 days prior to start of any survey activities.
Task 2 Ocean Surveys	
Survey Plan	Draft survey plan due 30 business days prior to survey. Final survey plan due 5 calendar days from receipt of EPA comments.
Survey Lessons Learned	Draft report due 14 days after survey completion when required within TD. Final report due 5 days from receipt of EPA comments.

Sample Collection	See TD for quantity, quality, type, logistics requirement and specificity.
Sample Analysis	See TD for quantity, quality, type, logistics requirement and specificity.
Sample Reporting	See TD for reporting requirements and specificity.
Data QA/QC	Data files in appropriate specified EPA electronic (digital) format due with draft and final reports.
Task 3 Data Management	
All data delivered to TOCOR and entered into EPA STORET via WQX	<p>The following is due 30 days after all data received from labs and/or sub-contractors:</p> <ul style="list-style-type: none"> • Appropriate data backup media • All data provided to TOCOR in proper electronic format • Configuration of appropriate formats and features for upload into EPA-supported databases as appropriate (i.e., STORET WQX- http://www.epa.gov/storet/wqx/; see note below). • All data submitted to Water Quality EXchange (WQX), in addition to submitting it to the EPA TOCOR. Data can also be organized and submitted using WQX Web which is a MS Excel based tool located at: http://www.epa.gov/storet/wqx/wqxweb_downloads.html. • An electronic version of the final report that includes QA/QC data for testing.

SECTION 4.0: GENERAL REQUIREMENTS

QUALITY ASSURANCE PROJECT PLANS

EPA policy requires that an *approved* Quality Assurance Project Plan (QAPP) be in place before any work begins that involves the data collection and development of models. Where a project will require a QAPP, the Contractor shall prepare the QAPP in conformance with EPA's *Requirements for Quality Assurance Project Plans (EPA QA/R-5)* and obtain EPA approval for the QAPP. No activities requiring a QAPP shall begin without EPA approval of the QAPP.

MONTHLY REPORTING

All documentation and reporting under this TO shall follow contract requirements. Additional requirements specific to this TO are as follows: Contractor's progress reports shall include, but not be limited to, the following items: Contactor technical lead name/contact information, status of project, any problems incurred & solutions implemented, status of funds allotted and spent for each project under the TO. During the period of performance of this TO, the Contractor is expected to immediately inform the TOCOR by telephone of: (1) any problems that may impede the successful completion of the requested items of work; and (2) any corrective actions needed to solve the problem. The Contractor shall address and correct any problems identified by EPA within three business days of EPA's written direction.

FORMAT AND SUBMISSION OF DELIVERABLES

All deliverables (draft and final) to EPA shall be furnished in an electronic version that EPA supports (see Prime Contract PWS Section 4.0 Deliverables). Final deliverables to EPA shall be prepared according to EPA publication guidelines and be ADA Section 508 compliant. Final submissions shall include one (1) electronic copy and two (2) paper copies.

Electronic Submissions

Electronic submissions shall be made in the following manner: Microsoft Word® for any written reports, summaries or analysis documents, Microsoft Excel® format for all spreadsheets, raw data, coding and modeling work (including all model runs with essential data to replicate model runs), and Microsoft Access® format for databases. For all GIS data layers, maps, photos, bench sheets and other written material not easily printed or saved in the above formats will be discussed and a format agreed upon with the EPA TOCOR prior to submittal by the contractor. Final electronic submissions shall be on external hard drive or Digital Versatile Disc (DVD). The contractor may utilize an FTP, but only if the EPA TOCOR gives written permission. Every electronic document and all sections, text, graphs, charts or figures shall be unlocked, open, and editable so that EPA may make further changes.

Paper Submissions

Unless specified otherwise by the TOCOR, any required final paper submissions shall be made in the following manner: two (2) separate and identical copies of all deliverables must be submitted; each separate copy includes all the products due at that date (i.e., Task 1, 2, etc.), and must be submitted in one (1) or more bound volumes, as appropriate, with a title page, an executive summary describing the purpose and content, and an index, located inside the front cover of each bound volume, and electronic copies enclosed in envelopes (or other suitable means) bound in the respective volume. In addition to final paper deliverables Microsoft Word® version shall be provided. In addition to the paper and Microsoft Word® versions, a PDF version may be required.

ADA Section 508 Compliance

All electronic and information technology (EIT) and all EIT deliverables shall be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>. The Contractor shall include documentation which indicates that the contractor has tested the deliverable against applicable Section 508 Standards. The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the TOCOR.

QUALITY ASSURANCE SURVEILLANCE PLAN (QASP)

See contract requirements. EPA anticipates that the contractor's work will be judged "satisfactory" according to the QASP if TOCOR edits to deliverables are no more than ten percent (10%) of the content of any draft deliverable, or less than two percent (2%) of any final deliverable. In addition, EPA anticipates that the Contractor's work will be judged "satisfactory" according to the QASP if less than ten percent (10%) of the pages of written final deliverables contain TOCOR edits for such things as grammar, punctuation and format.

The TOCOR can, upon request, furnish a copy of the EPA Correspondence Manual for the Contractor's use.

TECHNICAL DIRECTION

The Contract level COR or an authorized individual is permitted to provide technical direction. Technical direction must be within the statement of work of the contract and includes: (1) Direction to the contractor which assists the contractor in accomplishing the Statement of Work, (2) Comments on and approval of reports or other deliverables. Technical direction will be issued in writing or confirmed in writing within five (5) calendar days after verbal issuance. One copy of the technical direction memorandum will be forwarded to the Contracting Officer and the Contract Level Contracting Officer Representative.

PERIOD OF PERFORMANCE

When the Task Order reaches 30 calendar days prior to the end of the Period of Performance in each period, the Contractor shall decide whether the deliverables, milestones, benchmarks, and any outstanding TD from the TOCOR will be satisfactorily completed in the form requested in the Technical Direction by the end of the Period of Performance. If the Contractor determines one or more of the above-referenced items will not be able to be completed in the requested form within the Period of Performance and with the available funding, the Contractor shall notify the TOCOR and the CO immediately. Within 5 business days of said notification, the TOCOR in coordination with the CO will provide TD concerning use of the remaining funding to prepare and furnish to the TOCOR all interim draft deliverables, interim work products, and any working files in an electronic format which is supported by EPA, for eventual continuation of the project after the end date of the Task Order.

ANTICIPATED TRAVEL

All travel under this Task Order shall comply with contract requirements and only according to specific Technical Direction. The contractor shall adhere to the requirements of clause **EPA-H-31-104 APPROVAL OF CONTRACTOR TRAVEL** of the contract.

CONFERENCE/MEETING GUIDELINES AND LIMITATIONS

The EPA does not anticipate any conference/meeting under this task order will exceed a total cost of \$20,000. The Contractor shall immediately notify the CO, CLCOR and TOCOR of any anticipated individual event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the CO.

CONTRACTOR IDENTIFICATION

The Contractor staff shall be required to identify themselves as contractors whenever their EPA work brings them in contact with the public (such as when they are providing technical information or conducting training and conferences). Contractor staff must always wear Contractor ID badges when interacting with the public. Contractor personnel are prohibited from acting as the Agency's official representative. The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the TOCOR.

SECTION 5.0: APPENDICES

APPENDIX 1: GENERAL VESSEL REQUIREMENTS FOR EPA SURVEYS

TD will be provided to secure any identified vessels. Contractor should include in their workplan a cost estimate which includes leasing vessels based on each TD. In some cases, work shall be conducted with vessels that will not overnight at sea, other surveys will require 24-hour operations at sea. This appendix describes generic vessel requirements for longer term surveys which require 24-hour operations.

General Equipment Requirements

The vessel owner/operator is required to obtain and carry on board for the time of the charter a USCG letter of designation as an oceanographic research vessel or an appropriate Coast Guard issued Certificate of Inspection. Inspected vessels that possess a current U.S. Coast Guard, SOLAS or U.S. Navy INSURV inspection certificate have been physically inspected by competent marine personnel and such inspections may be used to satisfy safety objectives. A current inspection is one that has been performed within 12 months of the vessel's charter date. The vessel must maintain a full suite of USCG-approved/required navigation, communications, lifesaving/firefighting, and sanitation/first aid equipment on board. Vessel must meet checklist items in Chapter 14 EPA Vessel Safety Manual, "Chartering Non-EPA owned vessels review checklist".

<https://www.epa.gov/sites/production/files/2016-03/documents/epa-vessel-safety-manual-2012.pdf>

Specific Scientific Requirements for 24-hr Operations-capable Vessel

Below are general requirements for vessels employed for survey work at EPA ODSs.

- Equipped to continually operate on 12 or 24-hour schedule in typical sea state conditions 3 to 5 nautical miles offshore of the coast for a minimum duration of 7 sea days.
- A stable platform, approximately 100 feet or more in length capable of operating in water depths as shallow as 30 feet and as deep as 10,000 feet, with A-frame, winch and hydrowire (stainless or non-contaminating lubricant) able to deploy equipment weighing up to 2000 pounds, and adequate deck lighting to allow for safe night working conditions.
- Berthing capacity for a minimum of 12 scientific crew, if appropriate for proposed survey plan. Berthing shall be provided beginning the night proceeding mobilization and ending the night following demobilization.
- Provisions – 3 meals a day for the days the science team is on board.
- Electronic positioning equipment (dGPS) with minimum accuracy of +/-3 meters.
- Fathometer with minimum accuracy of +/-1 foot.
- Capable of maintaining A-Frame position within 25 meters of station coordinates. In most cases, dynamic positioning will be required.
- Dry and Wet Labs with sufficient freezer and refrigerator space to accommodate sample storage: 30 cubic feet for refrigerator and 17 cubic feet of freezer.
- Deck, dry lab, and wet lab should include sufficient work space for scientific operations. Dry lab should be minimum 300 square feet. Wet lab should be minimum 150 square feet and provide raw seawater supply.
- Monitor displaying ship navigation information (i.e., location, bearing etc.) in all lab spaces.
- Internet access for science party
- Consideration of the range of speed that the vessel can operate to ensure that sufficient slow speeds can be achieved to collect video of appropriate quality for data analysis. Vessel attributes needed to operate and collect appropriate images from the video sled: The survey vessel will need to have the ability to tow the video sled at speeds between 1.0 – 2 knots. The vessel must

have the ability to navigate at those speeds and employ a bow thruster if need be. The video sled requires this vessel speed for proper video bottom contact. A viewing station in the science/dry lab is preferred. There must be adequate winch line for at least a 45 degree angle of tow with bottom contact.

Additionally, vessel leasing schedule should include:

- All appropriate vessel transit days to/from the point of mobilization/demobilization
- ½ to one day to load/unload equipment and supplies
- Sufficient days to transit to/from/between sampling sites and a sufficient number of days to complete field work objectives, including two bad weather days.
- Parking for up to five vehicles at the mobilization/demobilization for the duration of the surveys shall be available.
- Mobilization/de-mobilization may occur at the same facility and in the vicinity of the survey. If a vessel from nearby port of call is leased, MOB and DEMOB at that location may be acceptable and must be arranged by the contractor. Please check with TOCOR for any additional information regarding specifics for each survey.

APPENDIX 2: GENERAL ANALYTICAL SERVICES SCOPE OF WORK

BACKGROUND

The laboratory shall furnish the necessary personnel, material, equipment, services and facilities to perform the analyses of environmental samples utilizing approved analytical methods, following strict quality assurance/quality control procedures, and submitting analytical results in a standardized format, as described in this PWS or applicable attachments.

I. Facilities (Equipment/Personnel/Materials Specification)

The laboratory shall provide personnel, facilities and equipment for sample analyses and data reporting. The sample preparation specialist(s) and analysts assigned to each project shall have experience in the specified preparation technique(s) and analytical procedures. Analysts shall also be experienced in the interpretation of analytical results from environmental samples by the instrumentation required to perform analyses as stated in the attached methods.

II. QA Plan

A written laboratory QA Plan must be available to present the policies, organization, objectives, functional guidelines, and specific QA and QC activities designed to achieve the data quality requirements in this SOW or it's attachments. Where applicable, SOPs pertaining to each element of the QA Plan. The laboratory's written QA Plan must be available to EPA during any on-site audits and must be submitted to EPA upon request.

The QA program shall incorporate quality control (QC) procedures, any necessary corrective action, and all documentation required during data collection as well as the quality assessment measures performed by management to ensure reliable data production. This program shall include the use of standard reference solutions from EPA or the National Institute of Standards and Technology (or secondary standards traceable thereto), blanks, matrix spikes, replicate analyses, and standards to support the quality of analyses. This QA program shall be documented in a written QA Plan.

III. Sample Documentation and Tracking

Custody must be traceable from the time of sample collection until the time of sample disposal. To accomplish this, appropriate sample identification, chain-of-custody (COC), sample receiving, and sample tracking procedures must be followed.

Laboratory shall have a specified method for maintaining identification of samples and analytical batches throughout the laboratory to assure traceability of samples while in possession of the Laboratory. Each sample and sample preparation container shall be labeled with a unique laboratory identifier. The unique laboratory identifier shall be cross-referenced to the sample identification information provided by the sampling organization.

Laboratory shall have and follow written SOPs for maintaining identification and custody of EPA samples throughout the laboratory.

IV. Analytical Methods

Laboratory shall utilize the methods specified or referenced in the TD. In most cases these methods will reflect standard EPA methods specified in the relevant Region's implementation manual. Laboratory shall follow the quality control (QC) requirements described in each project specific method and any requirements specified or referenced in the TD. Laboratory shall establish and implement a

comprehensive quality assurance (QA) program to define the reliability of the analytical results for analyses performed under this SOW.

Generally, sediment and tissue chemical analyte lists will include polycyclic aromatic hydrocarbons (PAHs), chlorinated organics (polychlorinated biphenyls (PCBs) and pesticides), and metals. In certain cases, dioxins and furans may be required. Water samples analyses will generally be limited to metals and chlorinated organics analyses.

In the event of unacceptable performance, EPA shall have the option of rejecting all or part of a data package. Performance as specified by the contract will serve as a basis of acceptance. The Agency shall have 30 days from the receipt of the data package for review and inspection. No payment shall be made for rejected data.

V. Deliverables

All documents produced by the laboratory which are related to the receipt, preparation, and analyses of the samples are considered deliverables. These records should be submitted to EPA as originals; however, copies will be acceptable where the document is part of a bound laboratory logbook or notebook.

The sample data package shall include:

- A. Case Narrative describing the analyses and any unusual problems with the project.
- B. Final tabulated results of sample analyses showing analytes, methods used, analyte concentrations, units of quantitation, dates of analysis, sample receipt date, EPA sample number, laboratory sample number, type of matrix (soil, water, waste, etc.), and % solids for soil samples.
- C. Instrument raw data and analyst bench records describing dilutions, weights, sample size prepared, final volumes, amount injected, etc., such that an independent data reviewer may recreate the calculations.
- D. Example calculations of sample results and quantitation limits.
- E. Recoveries of Initial and Continuing Calibration Standards and True Values.
- F. Blank results and matrix spike/matrix spike replicate results tabulated and reported.

VI. Document Control Procedures

Laboratory shall provide reports and other deliverables as specified. In addition, the laboratory shall assure that all documents for a specified project will be accounted for when the project is complete and made available to EPA upon request. Accountable documents used by laboratory shall include, but are not limited to, logbooks, chain-of-custody records, sample work sheets, sample run logs, instrument raw data, bench sheets, sample preparation records and other documents relating to the sample analysis.

All original documentation not provided to EPA with the data package related to the preparation and analysis of the samples shall be kept on file for a minimum of five years. If at the end of the five-year period, the laboratory desires to dispose of the original documents, the laboratory should first contact the EPA contract officer for permission to dispose of the documents. If directed by the EPA contract officer, the laboratory shall ship all project documents to EPA rather than disposing of the documents.

VII. Retention/Disposal of Samples

Contractor's laboratory shall dispose of unused sample volume and used sample bottles/containers no earlier than 90 days and sample extracts/digestates no earlier than 365 days following complete

submission of analytical data, unless otherwise instructed by EPA. Sample/extract disposal and disposal of unused sample bottles/containers shall be done pursuant to all applicable laws and regulations governing disposal of such materials.

APPENDIX 3: SURVEY PLAN TEMPLATE

The below template is suggested, however adjustments to the information included in the survey plan may be adjusted as described in TD.

SURVEY PLAN – [INSERT VESSEL NAME] Site Monitoring Survey of [INSERT SITE] Ocean Dredged Material Disposal Sites

SURVEY DATE:

1.0 GENERAL INFORMATION

Survey Chief Scientist:

Organization:

Address:

Tel:

Email:

Project Lead Scientist:

Organization:

Address:

Tel:

Email:

Vessel Contact:

Organization:

Address:

Tel:

Email:

2.0 SCHEDULE OF OPERATIONS

Mobilization Date:

Mobilization Location:

Departure Date and time:

Planned Survey Duration (days):

Allowable Weather Days:

Maximum Survey Duration:

Demobilization Date:

Demobilization Location:

Comments:

3.0 BACKGROUND INFORMATION

May include but not limited to information about the individual ocean disposal site including: general location; size, shape, and depth of the site; designation and monitoring history; site use information; etc.

4.0 SURVEY OBJECTIVES and RATIONALE

Information in this section may address but is not limited to:

- Overall objective of the survey
- Types of information, samples, and data being collected and why

5.0 ENVIRONMENTAL MANAGEMENT QUESTIONS ASKED BY PROJECT/SURVEY

Include the scientific questions that will be answered by the information collected during the survey.

6.0 SURVEY LOCATION AND DESCRIPTION OF ACTIVITIES

Include site location coordinates, depth ranges, maps, sampling location coordinates and depths, information about transect lines, lengths, locations, etc.

7.0 SURVEY & SAMPLING METHOD DESCRIPTIONS AND RATIONALES

Include sampling methodology and rationale for all types of sampling that will be conducted.

8.0 SEQUENCE OF SURVEY AND TASK EVENTS

Include anticipated schedule of survey including transit times and location, and sampling times and locations

9.0 NAVIGATION AND POSITIONING CONTROL

10.0 EQUIPMENT and SUPPLIES

Include list of equipment from vessel (including sample storage and position capabilities) and list of equipment (e.g. sampling equipment) and owner as appropriate

11.0 QA/QC PROCEDURES

12.0 SCIENTIFIC PARTY

Include list of scientific staff and affiliation

13.0 PROPOSED REPORTING REQUIREMENTS

Describe reporting requirements during and following the survey

14.0 OTHER OPERATIONS

Include additional information as necessary

15.0 REFERENCES

APPENDIX 4: SITE MONITORING AND ASSESSMENT REPORT TEMPLATE

The below template is suggested, however adjustments to the information included in the survey plan may be adjusted as described in TD.

SITE MONITORING AND ASSESSMENT REPORT TEMPLATE

The Site Monitoring and Assessment Report (SMART) should characterize how the survey data addressed the objectives of the survey and what conclusions and management decisions resulted.

1.0 EXECUTIVE SUMMARY

2.0 GENERAL INFORMATION

Site Name (Region):

Survey Chief Scientist/Organization:

Telephone:

Email:

Project Manager/Organization:

Telephone:

Email:

Vessel/Organization:

Vessel Contact Name:

Telephone:

Email:

Other Key Personnel/Organization:

EPA Funding/Contract/IA No.:

Contractor Organization:

Project Manager:

Telephone No:

Email:

3.0 SCHEDULE OF OPERATIONS

Number of survey days:

Mobilization date (Location):

Demobilization date (Location):

4.0 BACKGROUND INFORMATION

Site information (e.g., physical traits, ecosystem characteristics, dispersive/containment site)

History

Type of material disposed, quantity disposed, and frequency of use

Dates and key findings of prior surveys

Reason for survey (e.g., scientific, operational, regulatory)

Survey objectives

5.0 SUMMARY OF SCIENTIFIC ACTIVITIES/OBSERVATIONS

Sequence of tasks/events

Activities listed by day

Operating area (include map/figure)

Methods

Method descriptions

Explanation of how methods support survey objectives

If multiple methods are used to obtain one measure (i.e. sidescan and sediment grabs for sediment grain size), explain why

Sampling procedures

Procedure description

Number of stations used for each procedure

Names and number of stations at reference areas (if applicable)

Equipment used

Calibration protocol

QA/QC protocol

Field analysis

Types of analyses performed

Description of analysis

Data type obtained

Analyst

Equipment used

QA/QC protocol

Post voyage analysis

Types of analyses performed

Description of analysis

Data type obtained

Analyst

QA/QC protocol

6.0 DEVIATIONS FROM SURVEY PLAN

Cause

Corrective action

Effect on data collection

7.0 DATA ANALYSIS

Methodology

Statistical analyses used

Data summary

Narrative description

Tables, graphs, and/or maps

8.0 SITE ASSESSMENT

Description of assessment methodology

Scientific basis of methodology

Computational models

Reference site comparison

9.0 CONCLUSIONS

Conclusions for each survey method

Reasoning for conclusions with supporting documents

10.0 SUMMARY AND RECOMMENDATIONS

Discussion of how survey objectives were achieved

Anticipated environmental management decisions that will be based upon survey findings
Implications of site assessment with regards to future survey needs

11.0 REFERENCES

12.0 APPENDICES